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A CRITICAL REVIEW STUDY ON UPVISHA

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ABSTRACT

RASA SHASTRA, a discipline of Ayurveda, deals with huge number of poisonous drugs utilized in various processes as well as for the internal administration. These poisonous drugs can be divided into three part as herbal, metal and minerals, poisons based on their origin. In Ayurveda, there are less toxic herbal drug known as *Upvisha*. List of poisonous materials are authenticated in Schedule-E (I) of Drugs and cosmetic Act 1940 to spread their therapeutic strength for well-being of human health within the perimeter of rules there on; provided that these materials require some pharmaceutical treatment before their intended use. Poisonous materials are therapeutically more potent in comparison to other drugs because of their *Vavyaee, Tekshana, Asukari* etc. like nature. *Upvisha* are mostly use in various diseases with many therapeutically prepration. In Ayurvedic medical practice different poisonous herbs are used directly after *Shodhana* or as an ingredient of certain compound formulations for treating various disease.

KEYWORDS: *Upvisha, Shodhana,* therapeutically prepration.

INTRODUCTION

Ayurveda has richest source of precursor health knowledge and treatment as well as preventive and curative. Plants are the primary source of medicine. A number of compounds have been isolated from medicinal plants and bring in use for the mankind; however most of these medicines have been withdrawn because of their toxicity or adverse effects.[1] Various poisonous plants & minerals like *Bhanga* (Cannabis sativa Linn.), *Ahiphena* (Papaver

somniferoum Linn.), *Vatsanabha* (Aconitum ferox Wall.), Kupilu (Strychnos nuxvomica Linn. f.), Dhattur (Dhatura metel Linn.), Parada (mercury), *Gauripashana* (Arsenic), etc. have been used in Ayurveda medicine.[2] *Upvisha* (either refers to "semi (lesser) poisons" or "manufactured poisons". It can be derived from various parts of plants, which are toxic and hallucinogenic but usually non-lethal, unless taken excessively. Herbal poisonous materials are very much effective to change the body physiology quickly as per the need, because these materials are having the ancient pharmacological properties like, *Laghu, Ashu, Yogvaha, Vyavai, Vikashi, Teekshna, Ushna, Apaki* etc.[3]

Acharya Charaka and *Sushruta* have enumerated ten similar *gunas* of *visha* with an exception of *apaaki* (*Sushruta*) being replaced by *anirdeshya rasa (Charaka*). *Acharya Vagbhata* has attributed eleven *gunas* to a *Visha Dravya* by including *Apaki* and Avyaktarasa (instead of *Anirdeshya Rasa*). *Sharngadhara* has stated certain extra *Gunas* of *Visha Dravya* like *Chhedi, Madavaha, Jivitahara* And *Yogavahi*. Deferent classical texts have enumerated different drugs under this category. *Upvisha* are class of relatively less virulent plant toxins and are mentioned and classified by different treatise. *Rasa shasthra* elucidates processing of drugs by the name *Samskara*, which is proficient of alter the qualities of the drug. *Shodhana* is one such process used for Samskarana of drugs. Therefore in Rasa-shastra the *Shodhana* means a process of not only purification but also involves the detoxification and enhancing the efficacy of the drugs. The materials like *Vatsanabha, Kupilu, Jaipal, Bhanga, Bhallataka,* etc. are also used in contemporary medical practice of other system of medicines, either in their synthetic form or extracting the active compounds; rather than the holistic use in traditional medicines.

Table 1: Upvisha According To Different Classical Texts.

S.N.	**Upvisha**	***Botnical name***	***Rnav*[4]**	***RRS*[5]**	**RSS[6], AP[7], YR[8]**	**R. Chi[9]**	***RT*[10]**
1.	*Snuhi*	Euphorbia nerifolia	+	-	+	+	+
2.	*Arka*	Calotropis giganitia	+	+	+	+	+
3.	*Datura*	Datura mental	+	+	+	+	+
4.	*Karavira*	Nerium oleander	+	+	+	+	+
5.	*Langli*	Gloriosa superba	+	+	+	+	+
6.	*Vishatinduka*	Nux vomica	-	+	-	+	+
7.	*Bhallataka*	Semecarpus anacardium	-	+	-	-	+
8.	*Gunja*	Abrus precatorius	-	-	+	+	+
9.	*Ahiphena*	Opium poppy	-	-	+	+	+
10.	*Jayapala*	Croton tiglium	-	-	-	-	+

Table 2: Table Showing The Properties And Pharmacological Action of visha.

Properties	Pharmacological action	
	Charaka[11]	**Sushruta**[12]
Ruksa	Vata kopana	Vata kopana
Usna/Aseeta	Pitta kopana	Pitta and rakta kopana
Suksma	Rakta kopana	Penetrates all parts of the body disturb their healthy state
Ayakta Rasa	Kapha kopana Always follows annarasa	-
Vyavayi	Spreads all over the body	Spreads all over the body and manifests its own effects
Tiksna	Destructive to marma	Causes mati moha and destruction to
Vikasi	Pranaghna	Destroys dosa, dhatu, mala
Laghu	Durupakrama(untreatable)	Difficult to be treated
Vaisadya	Allow unobstructed movement of dosas	Causes seven purging
Asu	Spraeds quickly	Causes sudden death
Avipaki		Difficult to be digested hence may cause distress in the body for a long time

MATERIALS AND METHODS

Different texts of *Rasashastra*, *Nighantus* were scanned to collect the information regarding *Upvisha*. The details of morphological description of the drugs were collected from the texts of *Dravyaguna* while details of the chemical compotistions contain were taken from texts and relevant articles.

LITERARY REVIEWS

Brief Description of Upvisha[13]

Ahiphan- It is popularly known as afeem and belongs to the family papaveraceae. Ahiphena is the dried black coloured latex, obtained from the fruits of opium plant. It is an annual herb about 1m. high. Leaves oblong, serrate with a cordate base. Flowers- solitary large, scarlet or purple and variegated. Fruit- capsule, globular and smooth. Seeds- daek brown in colour and known as khakhasa tila. the fruits after extraction of the latex and removal of seeds are know as khakhasa.

Bhallataka- It is commonly known as marking nut and belongs to the family Anacardiaceae. It is a medium size tree, mostly foumd in central india and also grows in almost all parts of india. leaves- large, crowded toward the end of branches, oblong or obovate oblong, rounded at the apex, with short petiol. flowers – in panicles. 6-8 mm. in diameter, greenish white in colour. Fruit- drupe, 2.5cm. long, swollen thalamus is black or red in colour. Kernel is white.

Bhanga- It is popularly known as bhang and belongs to the family of Cannabinaceae. It is an annual herb wildly found throughout india and also cultivated unauthorizedly. It grows to a height of 1-4 m. leaves palmately divided with long petiole. Male and female plants are separately grow. Male flower in drooping panicles, female in axillary spike. Fruit- achen and ovate.

Dhattura- It is commonly known as dhatura and belongs to the family solanaceae**.** It is medium sized annual herb. 1mt. high, densely covered by greenish tomentum. Leaves- 15-20cm. long ovate, coarsely toothed with long petiol. Flower- large, solitary, tubular hite, fruit globose, 3-4 cm. diameter, covered wiyh spines. Seed – numerous, rugose, yellow.

Gunja- It is a woody climber, found throughout india. Leaves-paripinnate 5-7cm. Long, leaflets 1cm. Long, Oblong. Flowers-Racemes, Pink or White. Fruits-Pod 3-4cm. Long, Oblong Turgid. Seeds-3-5subglobose, Scarlet Red with a blacl hilum or white with a black hilum or completely white.

Jaiphala- It is commonly known as *Jamalghota* and belongs to the family Euphorbiaceae. It is a small tree with stellate- hairy young shoots. Leaves-membranous, ovate, caudate. Flowers-panicles. Fruit-capsule, white, turbinately ovoid triloculed. Seeds-3, black or dotted.

Karaveera- This plant is an erect woody shrub or a small tree that grows throughout india. Leaves 3 in a whorl, shortly stalked 10-15cm. Long, linear lanceolate, dark green. Flowers-red, rose or white coloured. 3.5cm in diameter in terminals racemose symes. Fruits-15-22cm long, rigid and contain 12mm long seeds.

Langali- It is an extremely beautiful annual climber, which climbs with the help of spirally twisted modified leaf apex into a tendril. This plant is known as flame of forest flowers scarlet or crimson coloured, solitary or in a corymbs. Fruits-capsule linear oblong, it contain a tuberous root of the shape of plough which is officinal part and hence the synonyms *Langali* and *Halini* are suitable. Seeds many, rounded.

SNUHI- It is a small tree with heavy flowing milky latex. Branch are cylindric. 2 sharp spines arise from spirally arranged tubercles. Leaves-alternated, fleshy clustered towards the end of the branches, sessile, 10-20cm. long by yellowish involucre. Fruits-capsule, 0.6mm. broad and contain smooth and flat seeds.

Kuchala- It is found in hot and moist areas of India like Chennai, Travenkor, Cochin, Malabaar and Odisa**.** It is a medium sized tree. Leaves-solitary, 7-15cm long, broadly elliptic, 3-5 nerved. Flowers greenish white in terminal cymes. Fruit-globose, 2-7cm in diameter berry seeds- many, look like bottoms, submerged in fruit pulp.

Arka- it is a shrub growing up to 2.5 mt. height. leaves 10- 20cm. long, ovate- obovate or ovate- oblong, acute, thick and tometose, flowers- terminal and axillary corymbs cymes, purplish red. Fruits- follicles, 10-14 cm long, recurved. Seeds- numerous with silky hair.

Ahiphane

Bhallataka

Bhanga

Dhattura

Gunja

Jayphala

Karveera

Langli

Langli

Kuchla

ARK

Table No. 2: Ayurvedic Pharmacology and Chemical Composition of Upvisha.

S.n.	Upvisha	Ayurvedic Pharmacology[14]	Chemical Composition
1.	Ahiphena	Rasa-Tikta,Kashaya; Guna-Laghu,ruksha,Sukshma,vyvayi, vikashi Virya-ushna; Vipaka- Katu; Karma-Madak,Vedanasthapan, Nidrajanan, Aakshephar; Dosha Prabhava-Kapha-Vata Shamak	Morphine, Codeine, Thebaine, Papaverine, Noscapine[15]
2	Bhallataka	Rasa-Katu,Tikta,Kashaya; Guna-Laghu,Snigdha, Tikshnam Virya-ushna; Vipaka- Madhur; Karma- Sphotajanan, Sheetprashaman, Vishaghna Dosha Prabhava-Kapha-Vata Shamak	Semecarpol, Bhilawanol[16]
3	Bhanga	Rasa-Tikta; Guna-Laghu,Tikshna Virya-ushna; Vipaka- Katu; Karma-Madak,Vedanasthapan,Shoolprashaman; Dosha Prabhava-Vata-Kapha Shamak	Tetrahydrocannabinol, Cannabinol, Cannabinol, β – caryophyllene[17]
4	Dhattura	Rasa-Tikta,Katu; Guna-Laghu, ruksha,vyvayi, vikashi Virya-ushna; Vipaka- Katu; Karma-Madak, Vedanasthapan, Jantughna, Shoolprashaman; Dosha Prabhava-Kapha-Vata Shamak	Scopolamine, Hyosciamine, Atropine, Meteolodine[18]
5.	Gunja	Rasa-Tikta,Kashaya; Guna-Laghu,Ruksha,Tikshna Virya-ushna; Vipaka- Katu; Karma-Kushthghna,Vedanasthapan,Keshya, Garbhanirodhaka; Dosha Prabhava-Kapha-Vata Shamak	Abrin, Abrine, Abralin[19]
6	Jaipala	Rasa-Katu; Guna-Guru,ruksha, Tikshna, Virya-ushna; Vipaka- Katu; Karma- Tikshna Virechaka, Lekhan, Sphotajanan Dosha Prabhava-Kapha-Pitta Shamak	Crotin (toxalbumen), Crotonside (glycoside)[20]
7	Karaveera	Rasa-Katu, Tikta,; Guna-Laghu, Ruksha, Tikshna Virya-ushna;	Neriodorin, Neriodorein, Karabin, Scopoletin, Scopolin Pruvoside,

		Vipaka- Katu; Karma-Shothahar, Kushthaghna, Vranashodhana Dosha Prabhava-Kapha-Vata Shamak	Ruvoside, Nariifolin, Cerberin[21]
8	Langali	Rasa-Katu, Tikta,; Guna-Laghu, Tikshna Virya-ushna; Vipaka- Katu; Karma-Raktotklesh, Kshobhak, Krimighna, Garbhapatan Dosha Prabhava-Kapha-Vata Shamak	Colchicine, Gloriosine[22]
9.	Snuhi	Rasa-Katu; Guna-Laghu, Tikshna Virya-ushna; Vipaka- Katu; Karma-Tikshna Virechaka, Lekhan,Vedanasthapan, Shothahar, Vishaghna Dosha Prabhava-Kapha-Vata Shama	Neriifolione, Neriifoliene, atriterpene [23]
10	Kuchala	Rasa-Tikta,Katu; Guna-Laghu, Ruksha, Tikshna; Virya-ushna; Vipaka- Katu; Karma-Aakshepjanana, Vedanasthapan, Sothahar, Shoolprashaman Dosha Prabhava-Kapha-Vata har	Strychnine, Brucine[24]
11	Arka-Ksheera	Rasa-Katu, Tikta; Guna-Laghu, Ruksha, Tikshna Virya-ushna; Vipaka- Katu; Karma-Vedanasthapan, Shothahar, Kushthaghna, Vranashodhana, Jantughna Dosha Prabhava-Kapha-Vata Shamak	Calotropin, Calotoxin, Uscharin, Gigantin[25]

Table No. 3: Shodhan Process of Upvisha By Different Classical Text.

S.n	Upvisha	Shodhan by Different Classical Text Along With Process And Duration		
		Ayurveda Prakasa[26]	**Yogratnakara[27]**	**Rasa Tarangni[28]**
1.	Ahiphena	Juice of giner (bhavana)	Juice of giner (bhavana)	Juice of giner (bhavana)
2	Bhallataka	_	-	Istika curna (adding & rubbing followed by washing with water narikelodaka boil)
3	Bhanga	Babbula tvaka kwatha(boiling) Cow's milk(bhavana)	Babbula tvaka kwatha(boiling) Cow's milk(bhavana)	Babbula tvaka kwatha(boiling) Cow's milk(bhavana)
4	Dhattura	Gomutra (keep- 12 hrs and decoecticate seeds)	Gomutra (keep- 12hrs)	Gomutra godugdha- boil- 3 hrs
5.	Gunja	Kanjika (boil 3 hrs)	Kanjika(boiling)	Kanjika (boil- 3 hrs)
6	Jaipala	_	Cow's milk (decorticate and boil)	-

7	Karaveera	-	Godugdha (boil)	-
8	Langali	Gomutra (keep- 1day)	Gomutra (keep- 1day)	-
9.	Snuhi	-	-	Add1/4 cinca davya and dry in sun- shine
10	Kuchala	Ghrta (frying)	Goghrta (frying)	Ghrta (frying) Godugha (boil- 3 hrs) Kanjika (keep- 3 days and decorticate)
11	Arka-Ksheera	-	-	-

Table No. 4: Antidotes, Past Use and Fatal Dose of Upvisha.

S.n.	Upvisha	Anti – Dotes[29]	Part Uses[30]	Therapeutic Dose	Fatal Does
1.	Ahiphena	*Ardraka (zingiber officinate) swarasa*	Fruit latex	30 to 125mg or 200mg of morphine[31]	----------
2.	Bhallataka	Kapikacchu (mucuna pruriens), palasha pushpa (butea monosperma)	Fruit	*1-3 rati or 5-10 drops of Oil[32]*	*3-6 gm or 15-20 drops of oil[32]*
3.	Bhanga	----------	Leaves, latex	125-250mg (bhang), 60-125mg, 30 mg(charas)[33]	10,000mg(bhang), 8000mg(ganja) and 2000mg(charas).[33]
4.	Dhattura	*Kanala (nelumbo nucifera) choorna and tandulodaka*	Seeds	50-100 mg[34]	100-125 seeds.[34]
5.	Gunja	----------	Seeds	----------	--------
6.	Jaipala	----------	Seeds	25-50 mg of seed and ½ -1 drop of oil[35]	4 seeds and 20 of oil.[35]
7.	Karaveera	*Hareetaki (Terminalia chebula)*	Root, root's bark	---------	--------
8.	Langali	*Shunti (zingiber officinale)*	Tuber	--------	---------
9.	Snuhi	*Avartaki (cassia auriculata)*	Latex	--------	---------
10.	Kuchala	Janmbu(syzygium cumini), ketaki(pandnus tectorus)	Seed	60-250 mg[36]	2gm or 15-30mg of strychnine[36]
11.	Arka Ksheera	*Neeli (indigofera tinctoria) swarsa*	Latex	--------	uncertain

Table no. 5: Ayurvedic Formulation of Upvisha.

S.n.	Upvisha	Ayurvedic formulation[37]
1.	Ahiphena	*Ahiphenasava, Nidrodaya ras, Dugdhavati, Karpur ras*
2.	Bhallataka	*Bhallatak tail, Amritbhallatak Yoga, Tila arushkar Yoga,*
3.	Bhanga	*Jatiphaladi Choorna, Madnanand modak*
4.	Dhattura	*Unmadgajankusharas, Sootsekharras, Kankasav*
5.	Gunja	*Gunjabhadra ras, Gunjadhtail*
6.	Jaipala	*Jalodarari ras, Jwaramurari ras, Ichchhabhedi ras*
7.	Karaveera	*Karveeradya Taila, Karveer yoga*
8.	Langali	*Kasisadi Taila, Langali rasayan*
9.	Snuhi	*Snuhyadi Tail, Chara sutra*
10.	Kuchala	*Agnitundivati, Navjivan ras, Lakshmivillas ras, Krimimudagar ras,*
11.	Arka Ksheera	*Arka Lavana*

CONCLUSION

By this all review work, it is concluded that *Upvisha* herbs are described ancient times in *Rasanav Rashratna Samuchya, Rasha Tarngani* etc. *Upvisha* are described in *Agadatantra* and *Rasashastra* being used as medicine according to their pharmacological properties and chemical composition. All *Upvisha* are reviewed briefly with its macroscopic characters. *Sodhana* is important process for *Visha* and *Upvisha*. From this study it may be concluded that drugs contains toxic alkaloids which may be purified by above methods and after proper *Sodhana* (purification) used for various therapeutic purpose. As we know very well that even a strong poison can be converted in to an excellent medicine if processed and administered properly but if handled inaccurately, it may become dangerous. All the drugs are showed their significant pharmacological activities even they are semi poisonous drugs. chemical composition, part uses anti – dotes, therapeutic dose and fatal dose, are the main features of this review. The information available in this review could be helpful to scientist, drug designers, forensic experts, and other scientific bodies related to *Ayurvedic* research. More research is needed in on these medicinal plants to establish their claimed therapeutic potential.

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